Clinical uses
- Primary congenital hypogammaglobulinemia: primary agammaglobulinemia, CVID, SCID, etc.
- Secondary acquired antibody deficiency
  - CLL
  - HIV
  - Parvovirus B19
  - Allogeneic BMT
- Autoimmune disorders
  - Hematologic: ITP, autoimmune hemolytic anemia, HIT, autoimmune neutropenia, posttransfusion purpura, etc.
  - Renal / vasculitic: membranous nephropathy, IgA nephropathy, HUS-TTP, lupus nephritis, Wegener’s, Kawasaki
  - Neuromuscular: polymyositis, dermatomyositis, inclusion body myositis, Guillain-Barre, myasthenia gravis
  - Sensitization to HLA antigens before transplantation
  - Asthma

Mechanisms:
- Reduce infection: adequate IgG (SCID)
- Reduce immune activity:
  - Interacts with Fc receptors on effector cells (ITP)
  - Antibodies against idiotypes on circulating autoantibodies (Wegener’s)
  - Neutralizing antibodies against toxins / superantigens
  - Promote solubilization and clearance of immune deposits (membranous nephropathy)
  - Promote catabolism of IgG and eliminating “bad” IgG
  - Neutralize complements

Risks
- Mild: flush, tightness, back pain, nausea, chills, diaphoresis, headache, fever, hypotension
- Infection: current practices reduced risk for hepatitis and HIV, no cases of Creutzfeldt-Jakob
- Aseptic meningitis
- Hemolysis (self-limited)
- Neutropenia (transient)
- Anaphylaxis (in patients with IgA deficiency, anti-IgA acts against IgA in IVIG)
- Renal toxicity: reduces Cr secretion without fall in GFR, or acute renal failure from osmotic nephropathy (usually first exposure with sucrose-containing products)
- Lytes: hyponatremia, pseudohyponatremia, reduced ESR, decreased anion gap, false serologies

IVIG in Myeloma (Chapel et al 1994)
- Randomized, double-blind, placebo-controlled trial with 9 hospitals in UK for 1 year
- 83 patients (mean 66, 51% men) with MM who could receive >6 months of treatment, plateau-phase
- Exclusion: anaphylaxis to blood product, immunoglobulin rx <1 month, IgA deficiency selective
- Rx IVIg 0.4 g/kg or placebo every 4 weeks for 12 months (delayed if infection present)
- Outcome:
  - 138 episodes of infection
  - 19 vs 38 serious infections (CI 0.007 to 0.071)
  - 0 vs 10 septicemia or pneumonia (P= 0.002)
  - Adverse reactions mild: 12% vs 5%
  - No mortality difference
  - Chest, not bladder / skin infections
- Most beneficial: responded poorly to pneumococcal vaccine
- Few patients neutropenic or receiving chemotherapy in study
- Bottom line: could consider in stable disease with poor response to pneumococcal vaccine and / or recurrent infections